National Aeronautics and Space Administration


# SCaN Program Overview
# Earth Venture–2 (EV–2) Pre-Proposal Workshop
# July 12, 2011

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# SCaN Program Objectives

- The objectives of the SCaN Program are to support the NASA Mission Directorates and external organizations with centralized space communications and data services that enable missions to meet their objectives

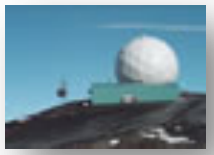
- Additionally the SCaN Program performs infrastructure, sustaining, and replenishment efforts necessary to maintain service capacity and capability consistent with the Agency's commitments and mission model

- The SCaN Program also conducts space communications technology development, data standards development, and radio frequency management to provide enabling, efficient and effective mission services

# SCaN Operating Networks

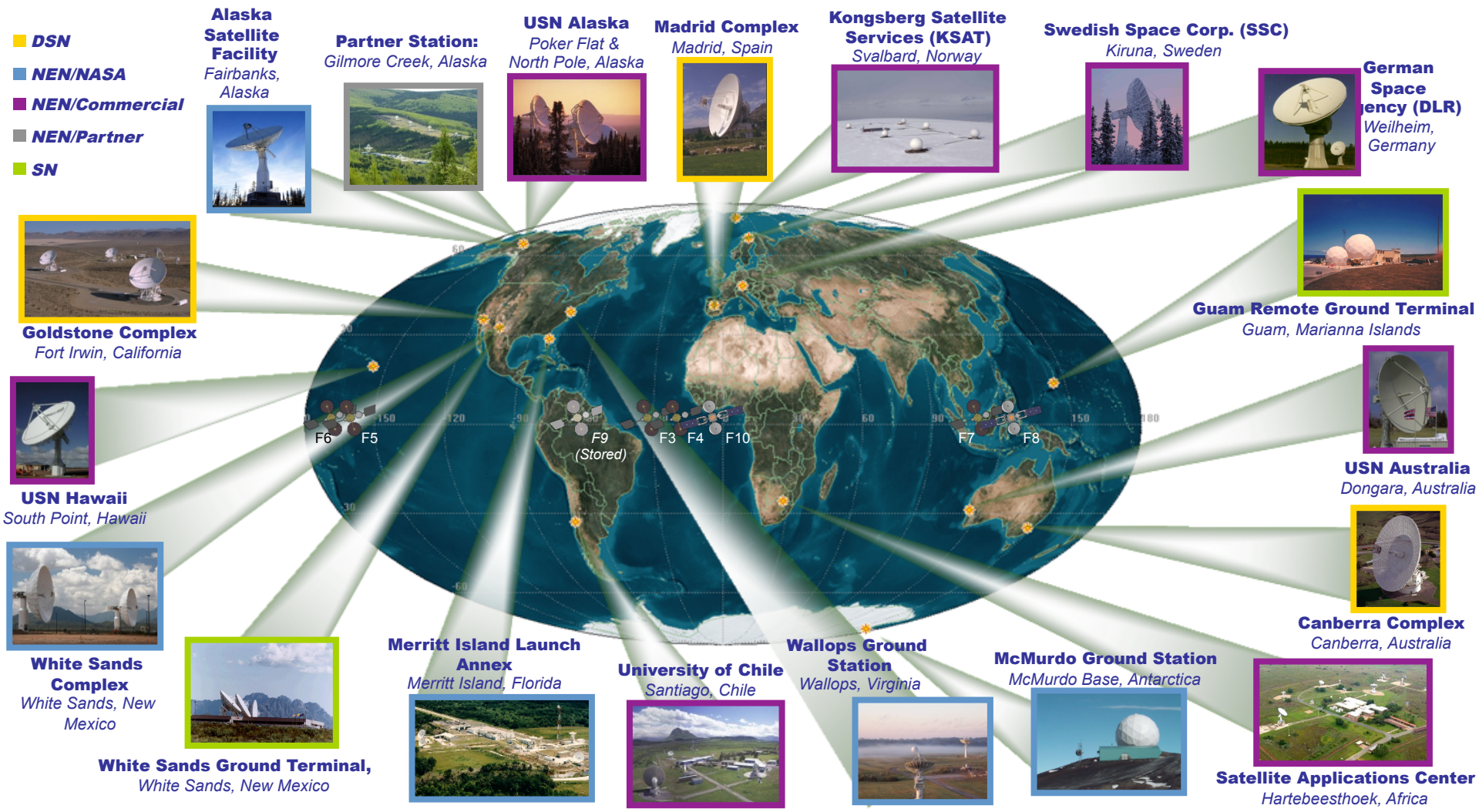
**Deep Space Network (DSN)**: three globally distributed terrestrial communications stations predominantly supporting missions operating at significant distances from Earth orbit

**Space Network (SN)**: geosynchronous relay satellites predominantly supporting Low Earth Orbit (LEO) missions with global coverage



**Near Earth Network (NEN):** globally distributed tracking stations supporting near Earth spacecraft needing periodic contact

# SCaN Ground Stations



# NASA Telecommunications Policy

- NASA Policy Directive (NPD) 8074.1, Management and Utilization of NASA's Space Communication and Navigation Infrastructure, states NASA Mission Directorates (MDs) shall:
  - Use SCaN networks to meet their communication and navigation requirements for human and robotic space missions
  - Where appropriate and cost-effective for the Agency, MDs, in coordination with the SCaN Program Office, may use pre-existing infrastructure external to NASA for this purpose, as long as no new facilities are constructed using NASA funds
  - Not design or develop space Communications & Navigation infrastructures independent of SCaN

# EV – 2 AO Telecommunications Requirements

- 5.2.5 Telecommunications, Tracking, and Navigation
  - Requirements 20, 21, and 22
- 5.2.6 Critical Event Coverage
  - Requirement 23
- Appendix B, Requirements for Proposal Preparation
  - Requirement B-30 Mission Design
  - Requirement B-32 Flight System Capabilities
  - Requirement B-35 Mission Operations

# SCaN Capabilities Documents

- NASA's Communications Services Document
  - Overview of service capabilities and service costing
  - Located in EV-2 Library http://essp.larc.nasa.gov/EV-2/ev2_Library.html
- DSN Service Catalog, DSN No. 820-100, JPL D-19002, Jet Propulsion Laboratory
  - http://deepspace.jpl.nasa.gov/advmiss
- Near Earth Network User's Guide Revision 1, 450-NENUG, 450/Exploration and Space Communications Projects Division
  - http://esc.gsfc.nasa.gov/space-communications/NEN.html
- Space Network Users' Guide Revision 9, 450-SNUG, 450/ Exploration and Space Communications Projects Division
  - http://esc.gsfc.nasa.gov/space-communications/sn-sne.html

# SCaN Commitment Process

- Contact the Commitment Offices early
- Fill out the Network Services Request as much as possible, for example:
  - Service requested (telemetry, tracking, command, science data)
  - Frequency band (Ku, Ka, S, X)
  - Data rates
  - Orbital information
- Commitment Office will assist proposer in understanding SCaN capabilities and “best use” concepts and approaches
- Commitment Office will prepare feasibility analysis, planning estimate, and commitment letter for proposer
- Commitment Office will broker NASA Integrated Network Services (NISN) and navigation services (e.g., GSFC Flight Dynamics) on proposer’s behalf
- Allow the process time

# SCaN Customer Commitment Offices

- JPL/DSN Commitments Future Planning Office
  - Deep Space Network mission design, proposal support, service agreements and compatibility testing
  - http://deepspace.jpl.nasa.gov/advmiss
- GSFC/Network Integration Management Office (NIMO)
  - Space Network and Near Earth Network mission design, proposal support, service agreements and compatibility testing
  - http://scp.gsfc.nasa.gov/nimo

# SCaN Points of Contact

- SCaN Program Office/NASA HQ
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